

REMARKS

The specification has been amended to employ more idiomatic English and better conform to U.S. practice. No new matter has been entered.

The claims have been amended to better conform to U.S. practice and better distinguish the claimed invention from the prior art. More particularly, independent claim 1 has been amended to include the limitations of claim 20 which has been cancelled. Additionally, an abstract has been added as required by the Examiner. No new matter has been entered by any of the foregoing amendments.

The art rejections are respectfully traversed. Considering first the rejection of claims 1-4, 6, 8, 11 and 20-26, as noted supra, claim 20 (and also claim 22) have been cancelled, thus rendering moot the rejection of claims 20 and 22. As to the remaining claims, Applicant respectfully submits the primary reference Semancik et al. does not teach or suggest "at least one active microelectronic device integrated in said island", as required by claim 1, nor teach or suggest that at least "one of said active microelectronic devices is a chemical sensor whose chemically active layer is exposed to the ambient", or that the chemical sensor is "based on a field effect detection mechanism". Rather, Semancik et al. discloses only the use of a passive sensing layer built on an active membrane with heaters and temperature sensing means. In contrast thereto, the present invention uses a "passive" membrane just for thermal insulation, and places the active microelectric components including a micro electrical sensor component for heating, temperature control and gas sensing based on field effect mechanism on top of the passive membrane.

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This is quite the opposite approach. Semancik et al. only describes passive functions of the sensing layers such as measuring resistance changes of the sensing layer. Semancik et al. also teaches that other passive properties can be monitored such as capacitance, I-V characteristics of work functions and the like. However, the means for performing these measurements are always considered to be arranged external of the membrane and not integrated as a fully functional FET micro electrical component on the membrane, i.e., an active component as required by the claims of the present invention.

By using such an active micro electrical component, it is further possible to eliminate heaters from the membrane and also to use active micro electrical temperature sensors such as e.g., pn-diodes. This leads to improved temperature control. Furthermore, the integration of an active micro electrical component on a thermal isolation membrane as provided by the subject application permits the use of the more sophisticated field-effect mechanism gas sensor transistors in a low-power operation and, optionally, also in conjunction with rapid temperature modulation. This is, by no means taught or suggested by Semancik et al. Thus, claims 1-4, 6, 8, 11 and 20-26 cannot be said to be anticipated or for that matter obvious from Semancik et al.

Turning to the rejection of claim 5 as obvious from Semancik et al. in view of Goessler et al., claim 5 is directly dependent on claim 1. The deficiencies of the primary reference Semancik et al. vis-à-vis claim 1 are discussed above. It is not seen that Goessler et al. supplies the missing teachings to Semancik et al. to achieve or render obvious claim 1 or claim 5 which depends thereon. Goessler et al. teaches a diode for sensing temperature in a hot plate. Suffice it to note Goessler et al. is not a chemical sensor, and it is submitted there would be no motivation to one skilled in the art to combine Semancik et al. and Goessler et al. as suggested by the Examiner.

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Moreover, even if one were to make the combination, such combination still would not meet the requirements of claim 1 or claim 5 that depends thereon.

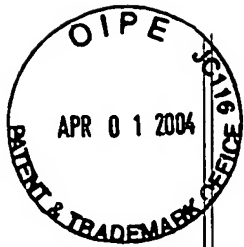
Turning to the rejection of claim 7 as obvious from Semancik et al. in view of Giedd et al., claim 7 is indirectly dependent on claim 1. The deficiencies of the primary reference Semancik et al. vis-à-vis claim 1 are discussed above. Giedd et al. does not supply the missing teachings. Giedd et al. has been cited as teaching an insulator formed of silica nitride and is acknowledged as so teaching. However, the more basic and essential features of Applicants' claimed invention missing from Semancik et al. are not supplied by Giedd et al. Accordingly, no combination of Semancik et al. and Giedd et al. would achieve or render obvious claim 1 or claim 7 which depends thereon.

Turning to the rejection of claims 9 and 10 as obvious from Semancik et al. in view of Russell et al., claims 9 and 10 are dependent on claim 1. The deficiencies of the primary reference Semancik et al. vis-à-vis claim 1 are discussed above. The Examiner cites Russell et al. as teaching a semiconductor made of silicon carbide and is acknowledged as so teaching. However, the more basic and essential features missing from the primary reference Semancik et al. are not supplied by Russell et al. Thus, no combination of Semancik et al. and Russell et al. would achieve or render obvious claim 1 or claims 9 and 10 which depend thereon.

Finally, turning to the rejection of claims 12-19 as obvious from Semancik et al. in view of Peng et al. and Mansell et al., all of claims 12-19 are linked to and include the limitations of claim 1. The deficiencies of Semancik et al. vis-à-vis claim 1 are discussed above. Neither Peng et al. nor Mansell et al. taken alone or in combination supply the missing teachings. Indeed, neither Peng et al. nor Mansell et al. are even concerned with gas sensors. Thus, no combination

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Amendment A

of Semancik et al., Peng et al. and Mansell et al. reasonably could be said to achieve or render obvious any of claims 12-19.

Form PTO-2038 for the Extension Fees accompanies this Amendment.

Having dealt with all the objections raised by the Examiner, the Application is believed to be in order for allowance. Early and favorable action are respectfully requested.

In the event there are any fee deficiencies or additional fees are payable, please charge them (or credit any overpayment) to our Deposit Account Number 08-1391.

Respectfully submitted

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